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The processes of motivation, teaching, and learning are interrelated. Misguided motivation and resultant disinterest in learning in underachieving students may be due to unhealthy self-concepts: if students believe that they can't learn, they usually don't learn. Since self-concept is a result of a student's experiences, a good self-concept can be taught by a learner-centered, nondirective teacher who displays a good grasp of the subject matter and the qualities of flexibility, openness, and warmth. A wide variety of teaching strategies (emphasizing individualized instruction) are necessary for dealing with student personality variability in such a way as to develop healthy self-concepts and enhance motivation and learning: the use of spaced learning and rest periods, frequent sessions for review of already known material, immediate feedback on student progress, recitation during learning, praise rather than blame, whole and part learning depending on type of student and material to be presented, divergent rather than convergent questions, and psychological relevance in curriculums. (A 59-item bibliography is included.) (SM)

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WHAT RESEARCH SAYS TO THE TEACHER

34

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Motivation in Teaching and Learning

Don E. Hamachek

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Motivation in Teaching and Learning

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MAY 2 1969

MOTIVATION IN TEACHING AND LEARNING

The behavioristic view of man as a reactive organism that responds more or less mechanically to outside forces acting upon him has been greatly modified in recent years to take into account man's capacity to consciously select and evaluate stimuli in terms of his needs, to assign value and meaning to experience, and to think creatively and engage in self-initiated action. In the broadest sense of the word, the way any of us learns or is motivated depends partly on the forces outside him (extrinsic) with which he continually interacts, and partly on his own psychological and functional (intrinsic) characteristics. Even though it is certainly partly true that man behaves in terms of the forces which are exerted upon him, learning, modern psychology tells us, is *a problem of the discovery of personal meaning* (10).*

This is the essence of a gradual change in our beliefs about learning. As you can see, emphasis shifts from manipulation of the environment, though that is still important, to working toward the facilitation of perception and the creation of favorable conditions for personal exploration and discovery of meaning. Motivation and learning are fostered by presentation of content in a self-related manner. (Some suggestions for doing this are discussed in "Teaching Techniques," later in this pamphlet.)

MOTIVATION AND LEARNING

Learning, then, is the acquisition of new skills, personal meanings and orientations, including avoidances, and *not doing* what one has done once before. In a more specific sense, learning something is usually followed by a change in behaving, thinking, or feeling.

Motivation, as we will treat it in this pamphlet, is a *process.* That is, it is a process that can (a) lead students into experiences in which learning can occur; (b) energize and activate students and keep them reasonably alert; (c) keep their attention focused in one direction at a time.

*Numbers in parentheses identify references listed on pages 30-33.

This pamphlet does not pretend to cover all that research has discovered about motivation and learning. The author has, however, attempted to extract from a growing body of knowledge those research clues which may be most productive and useful to you in your day-to-day teaching.

Motivation Is More Than One Thing

There probably isn't a single teacher who hasn't at one time or other asked, "How do you motivate students to study, to work, to learn?" Indeed, when inquiring about motivation, many earnest, dedicated teachers seem to be seeking some single technique, or gimmick, which will motivate. Although this pamphlet is designed to acquaint you with the nature and nurture of motivation and learning, we must admit at the outset that there is no one formula, or strategy, or set of devices which will motivate all pupils in the same way or the same degree. Rather, we must understand that what turns some students on is the very thing that may turn others off; that what motivates John may discourage Bill; that what excites Mary may bore Sally. Furthermore, the same individual may be motivated by different factors at different times. If we can begin by agreeing that motivation to learn is a complex blend of different environments, attitudes, aspirations, and self-concepts, then we are a step closer to effectively using what research tells us about how to improve our teaching practices.

We Are Never Unmotivated

When students are motivated, they are usually energized and directed toward rather selective behavior. If we view motivation from the point of view of the behaver himself, he is *never* unmotivated. That is to say, each of us, no matter who he is or what he does, is motivated by a continuous endeavor to maintain and enhance personal adequacy. If a pupil does well in school, he is more likely to be energized and directed toward selecting school-related activities than is a pupil who does poorly in school. Like anyone else, students do not long stay motivated by things in which they experience more failure than success. Dropouts, for

example, do not drop out because of either too many success experiences or too many opportunities for enhancing personal adequacy. Indeed, we have but to examine the things we have "dropped out" of, such as a club, a job, a friendship, an engagement, or a marriage, to get some idea of reasons we are sometimes motivated to move *away from* rather than *toward* particular experiences.

Motivation is a complex phenomenon. In the final analysis, learning and motivation are affected not only by things as they are, but also by these things as each person perceives and values them and by the way he sees himself.

SELF-CONCEPT AS RELATED TO MOTIVATION AND LEARNING

As William James put it, "The Self is the sum total of all that a person can call his." More than that, it is a person's awareness of his individual existence in terms of all of the beliefs, attitudes, and opinions which he holds about himself.

Increasing evidence indicates that student failures in basic school subjects—as well as the misguided motivation and lack of academic involvement characteristic of the underachiever, the dropout, the culturally disadvantaged, and the failure—may be due in part to unhealthy perceptions of the self and the world. Many students, for example, have difficulty in school, not because of low intelligence or poor eyesight, but because they have learned to consider themselves unable to do academic work. This seems to be equally true in special school activities, such as athletics, dramatics, club participation, or public speaking.

A pioneer in this area was Prescott Lecky (32), who was one of the first to point out that low academic achievement may be related to a student's conception of himself as unable to learn academic material. He observed, for example, that some children made the same number of errors in spelling per page regardless of the difficulty of the material. Although one would normally expect more errors on harder material, these children spelled as though they were responding to a built-in upper limit beyond which they could not go. It occurred to Lecky that they were

responding more in terms of how they *thought* they could spell than in terms of their *actual* spelling abilities. He arranged to have a group of these children spend some time with a counselor who helped them explore their feelings about their spelling abilities. As a consequence of these discussions and despite the fact that these children had no additional work in spelling whatever, there was a notable improvement in their spelling!

There is evidence to suggest that the way a student feels about himself and his ability to do schoolwork is positively related to what he thinks others expect of him. For example, students with low academic self-concepts are likely to perceive parents and teachers as having low expectations for them. That is, they perceive others as having little faith in their (the students') ability to do well in school in the first place (6).

Experiments in behavioral research have shown that the experimenter's *expectations* for his subjects' performance can be a significant determinant of how the subjects actually respond. For example, within each of the six grades in a particular school were three classrooms, one each of children performing at above average, average, and below average levels of scholastic achievement. In each of these classes, an average of 20 percent of the children were identified to the teachers as having scores on the *Test for Intellectual Blooming* which suggested that they would show unusual academic gains during the academic year. Actually, the children had been picked at random from the total population of children taking the same test. Eight months after the experimental conditions were instituted, all children were retested with the same IQ test. What were the results? For the school as a whole, those children from whom the teachers had been led to expect greater intellectual gain showed significantly greater gain in I.Q. score than did other children in the school! In fact, the lower the grade level, the greater the IQ gain (40). Apparently teachers treated the "brighter" children more positively and more favorably, and the children responded in kind by showing greater gains in IQ.

The results of these and other studies should serve to remind us that a student's learning and motivation in school may be more closely related to his perception of our expectations for him than we think.

Self-Concept and Learning: Research Conclusions

A considerable fund of research evidence relating self-concept to school learning has been accumulating in recent years. To give you a feeling for the relationships which have been uncovered, following are summary statements drawn from the major conclusions of seven different self-concept studies. Among other things, it has been found that—

1. In terms of their perception of self, individuals have a definite commitment to perform as they do. Other things being equal, those who do not achieve *choose* not to do so, while those who do achieve *choose* to do so (41).
2. There was a significant positive relationship between immature self-concepts and reading disabilities in a third- and a sixth-grade class (4).
3. There was a significant positive relationship between high self-concept and school achievement in a group of 102 fifth- and sixth-grade children (12).
4. There was a significant positive relationship between self-concept of ability and school achievement over a six-year period from grade 6 through grade 12 (5).
5. Measures of self-concept and ratings of ego-strength made at the beginning of kindergarten were found to be more predictive of reading achievement two and one-half years later than were measures of intelligence (53).
6. Male achievers feel more positive about themselves than do male underachievers (46).
7. Underachieving academically capable high school boys were found to have more negative perceptions of self and of others and were less emotionally stable than achievers (11).

When it comes to motivation and learning, self-concept research points to a simple conclusion: Underachievers sadly underestimate themselves. Which leads us to the next logical question.

What Can Teachers Do?

Just as a child *learns* to walk and *learns* to talk, he *learns* about himself. Each of us learns who he is and what he is from the ways in which he was treated while growing up, not to mention how he is treated on a daily basis by those around him. This is what the psychiatrist Harry Stack Sullivan called "learning about the self from the mirror of other people." Like each of us, our

students learn to view themselves as liked, acceptable, and capable from *having been* liked and accepted, and from *having been* successful. The crucial key to increasing the proportion of students with adequate self-concepts, with adequate feelings of self-esteem, is to help students toward success experiences that teach them they are worthwhile people.

How can we provide more students with positive self-concepts —with the "I can" feeling? First we must understand that a positive sense of self is teachable. If one's ideas about himself are a function of experience, then, whether we like it or not, young people learn about themselves in the classroom. And what is learned can be taught. The question is not whether we approve or disapprove of enhancing motivation and learning through teaching for a positive sense of self but whether the effects of our teaching are positive or negative. For the 7.5 million youngsters expected to drop out of school in the 1960's, the effects will clearly have been the latter.

If we, as teachers, are to facilitate motivation and learning through self-concept enhancement, we must—

1. Understand that we teach what we *are*, not just what we *say*. We teach our own self-concepts far more often than we teach our subject matter.
2. Understand that anything we do or say could significantly change a student's attitude about himself for better or for worse. Further, we must understand the implications of our role as persons who are important or "significant" to students if we are to utilize that role properly.
3. Understand that students, like us, behave in terms of what seems to be true, which means that many times learning goes on, not according to what the facts are, but according to how they are perceived.
4. Be willing not just to teach subject matter, but to deal with what the subject matter *means* to different students. In the truest sense of the word, we must be as willing to deal with the *interpretation* of a subject as we are to deal with the *information* about it.
5. Understand that we are not likely to get results simply by telling someone he is worthy. Rather, we imply it through trust and the establishment of an atmosphere of mutual respect. One good way to start is to take time to listen to what the students have to say and to use their ideas when possible.

6. Understand that teacher behavior which is distant, cold, and rejecting is far less likely to enhance self-concept, motivation, and learning than behavior which is warm, accepting, and discriminating.

TEACHER VARIABLES RELATED TO MOTIVATION AND LEARNING

Teacher Personality

We would probably all agree that it is quite possible for two teachers of equal intelligence, training, and grasp of subject matter to differ in the extent to which they are able to encourage student motivation and learning. Part of the difference can be accounted for by the effect of a teacher's personality on the learners.

For example, one of the most revealing investigations along this line was based upon the opinions of 3,725 high school seniors concerning best-liked and least-liked teachers (25). There were listed 43 different reasons for "Liking Teacher A Best" and 30 different reasons for "Liking Teacher Z Least." It is interesting to examine the four most frequently cited reasons in each category.

Four Most Frequently Mentioned Reasons for Liking "Teacher A" Best Reported by 3,725 High School Seniors

1. Is helpful in schoolwork, explains lessons and assignments clearly, and uses examples in teaching. (51 percent)
2. Cheerful, happy, good-natured, jolly; has sense of humor and can take a joke. (40 percent)
3. Human, friendly, companionable, "one of us." (30 percent)
4. Interested in and understands pupils. (26 percent)

Four Most Frequently Mentioned Reasons for Liking "Teacher Z" Least Reported by 3,725 High School Seniors

1. Too cross, crabby, grouchy, never smiles, nagging, sarcastic, loses temper, "flies off the handle." (50 percent)
2. Not helpful with schoolwork, does not explain lessons and assignments, not clear, work not planned. (30 percent)

3. Partial, has "pets" or favored students, and "picks on certain pupils." (20 percent)
4. Superior, aloof, haughty, "snooty," overbearing, does not know you out of class. (20 percent)

You will note that personality traits monopolize the top rankings after the first item, which deals with teaching technique as it immediately affects students. Interestingly, mastery of subject matter, which is vital but badly overemphasized by specialists, ranks sixteenth on both lists.

In connection with the *Quiz Kids* program, another investigator received 12,000 letters on the theme, "The Teacher Who Helped Me Most" (57). An analysis of those letters revealed that the top ranking personality traits were the following:

> (1) Cooperative, democratic attitudes; (2) kindliness and consideration for the individual; (3) patience; (4) wide interests; (5) personal appearance and pleasant manner; (6) fairness and impartiality; (7) sense of humor; (8) good disposition and consistent behavior; (9) interest in pupils' problems; (10) flexibility; (11) use of recognition and praise; (12) unusual proficiency in teaching a particular subject.

So far, we have been examining desirable personal characteristics of teachers as these characteristics are identified by students. For the most part, these characteristics group themselves under the general headings of capacity for warmth, patience, tolerance, and interest in students. What happens when these personal qualities are related to the more rigid test of whether having them makes any difference in the actual performance of students?

One investigation, for example, found that there are positive relationships between the extent to which a teacher shows a personal interest in and willingness to listen to students' ideas and the creativity shown by students (44). Another study found that warm and considerate teachers got an unusual amount of original poetry and art from their high school students (9). It has also been found that teachers with a greater capacity for warmth favorably affected their pupils' interests in science (38). In still another study, student learning was related to interaction between different teacher and student personalities (26). Comparisons were made between various teacher-pupil personality combinations in terms of pupil achievement, teacher knowledge, and classroom settings. It was found that the well-integrated (healthy,

well-rounded, flexible) teachers were most effective with *all* types of students. Two other identified teacher personality "types" (fearful and turbulent) were successful with only certain types of students.

We might conclude from everything said so far that only normal, well-adjusted persons should be teachers. To a great extent this is true. The evidence does suggest that teachers who are warm, flexible, tolerant, interested in students, and who have a sense of humor seem better able to positively affect the attitudes and learnings of students than do teachers in whom these personal characteristics are less evident. The point can be made, however, that some teachers are successful precisely because of their neuroticism. For example, the compulsive-obsessional teacher who places a high premium on order, accuracy, and precision may teach students the value of order in their lives. Or, we may find another teacher with strong needs for power and domination who vigorously carries students along with his own high standards of achievement. Still another teacher may have strong self-punishing tendencies who whips himself by the long hours and hard work he puts into the job. This does not mean, however, that we should recruit more neurotic teachers or that we should feel more comfortable about our own unsolved personal hangups. Absence of self-understanding and flexibility are the two conspicuously lacking personal qualities which make it difficult for the neurotic teacher to be successful with any group except that narrow band of students who help him meet his strong personal needs.

Teacher Interaction Styles

Even though there is not one *best* way to interact with students, research has shown that some ways are better than others.

For example, Flanders (16) studied teacher influence styles, pupil attitudes, and resulting achievement in seventh-grade social studies and eighth-grade mathematics. He uncovered four essential elements of teacher influence in the classrooms in which motivation, learning, and attitudes were superior.

1. The teacher was able to provide spontaneously a range of roles that varied from fairly active, dominative supervision to a more reflective, discriminating support.

2. The teacher was able to switch roles at will rather than pursue a single interaction style to the exclusion of other possibilities.
3. The teacher was able to bridge the gap between his diagnosis of a given situation and the course of action he should take.
4. The teacher was able to combine sensitivity and critical awareness so that, as the classroom's master observer, he was able to make reasonable diagnoses of current conditions.

(We should keep in mind, too, that these skills, which characterized successful teachers, were superimposed upon a firm grasp of the subject matter being taught.)

Interestingly, those teachers who were *not* successful were those who were inclined to use the same instructional procedures and interaction styles in a more or less rigid fashion. That is, there seemed to be little variation from one classroom day or situation to the next.

In an earlier study, detailed stenographic records, observation charts, and various time charts were kept on 47 teachers of social studies in high school ranked as superior and 47 ranked well below average in teaching skills. Practically every conceivable act and every expression of teacher and pupil interaction were considered—about 37 factors in all. The following are fragmentary interaction expressions which distinguished good from poor teachers. (As you read, you might try to imagine the voice inflection which accompanied each of these expressions.)

Characteristic Comments Made by Poor But Not by Good Teachers

Are you working hard? . . . Aren't you ever going to learn that word? . . . Everyone sit up straight, please. . . . I'm afraid you're confused. . . . No, that's wrong. . . . Oh dear, don't you know that? . . . Oh, sit down. . . . Say something. [Nearly one hundred different expressions were listed. Note the overtones of frustration, futility, and impatience which sound through most.]

Characteristic Comments Made by Good But Not by Poor Teachers

Aha, that's a new idea. . . . Are you going to accept that as an answer? I should like more proof. . . . Do you suppose you could supply a better word? . . . Can you prove your statement?

> . . . Don't you really think you could? . . . I'm not quite clear on that—think a moment. . . . Let's stick to the question. . . . Probably my last question wasn't a good one. [There was a long list of such expressions. Note the emphasis on challenging the student, on pushing and encouraging him to go beyond where he may be at the moment.]

As an interesting sidelight, the above study also showed that not only did poor teachers make more assignments than good teachers, but almost without exception, they made some sort of textbook assignment as a part of their daily procedure. In contrast, the majority of good teachers used something other than textbook assignments, such as reading outside books or problem-project assignments. When they did assign the text, good teachers were more likely to supplement it with topics, questions, or other references. Poor teachers not only made more assignments, but took less time in making them. The better teachers were more likely to make fewer assignments, each one covering a topic or unit of respectable size and taking some time to develop it.

There is also evidence that when a teacher is able to personalize his interaction he is apt to be more successful, particularly in motivating students to do better work. For example, in an experiment with high school and junior high school students, the teachers graded the objective tests of their pupils and then randomly assigned each paper to one of three groups (36). Each student in Group One was given back his paper with no comment except a mark. Each Group Two student was given a stereotyped, standard comment, from "excellent" if his score was high to "let's raise this grade." Every C student, for example, received his mark with the notation, "perhaps try to do still better." On every paper in Group Three, the teacher wrote a personal comment saying whatever she thought might encourage that particular student. On the next objective test, Groups Two and Three outperformed Group One. This suggests that the personalized comments had a greater effect than letter grades and that even a very short standard comment written on the paper produced measurable achievement gains. The greatest improvement was made by the failing students in Group Three who received encouraging personal notes on their papers. This study points up the motivational implications of interaction practices that go beyond the simple indication of right or wrong answers. It certainly does seem to be

true that teachers who show an active personal interest in their students' progress are likely to be more successful motivators than teachers who are inclined to be distant and impersonal.

Nondirective Versus Directive Teaching

The terms *nondirective* and *directive, learner-centered* and *teacher-centered, democratic* and *autocratic* have all been used to convey a difference in both the intensity and kind of either the teacher's or the student's involvement in the total classroom process.

Two major conclusions were reached in one research effort investigating these two kinds of teaching (17).

1. The teacher-centered behavior of directing, demanding, and using private criteria in deprecating a student leads to hostility to the self or teacher and aggressiveness, or sometime to withdrawal, apathy, and even emotional disintegration.
2. The learner-centered behavior of accepting the student, being evaluative or critical only by public criteria, and being usually supportive elicited problem-orientation, decreased personal anxiety, and led to emotionally readjusting and integrative behavior.

Stern (50) reviewed 34 studies (largely of college classes) comparing nondirective and directive instruction in their influence on two types of learning outcomes: (1) gain in cognitive knowledge and understanding and (2) attitude change toward self and others. In regard to cognitive gains, he concludes: "In general, it would appear that the amount of cognitive gain is largely unaffected by the autocratic or democratic tendencies of the instructor." However, when he summarized the findings related to attitude change toward the self and others, the conclusion is somewhat different: "Regardless of whether the investigator was concerned with attitudes toward the cultural outgroup, toward other participants in the class, or toward the self, the results generally have indicated that nondirective instruction facilitates a shift in a more favorable, acceptant direction."

However, when student reactions to nondirective instruction were considered great, individual differences were evident. Stern found that "at least as many students feel dissatisfied, frustrated, or anxious in a nondirective classroom as find it valuable." Indeed,

nondirective classrooms, as conducted by some teachers, may be more permissive than learner-centered ones and may arouse latent anxieties in students with a greater need for structure and personal help. More will be said about this in the section dealing with student variables as related to motivation, teaching, and learning.

Summary Statement

We must remember that in comprehensive studies such as those cited in this section, there is much overlap between the personal characteristics and teaching styles of "high" and "low" motivator teachers. None of the research demonstrates that there are classroom practices which are used exclusively by either kind of teacher. Nevertheless, there are characteristics which seem to appear more consistently in one group than the other. For example, when it comes to classroom behavior, interaction patterns, and teaching styles, teachers who are superior in encouraging motivation and learning in students seem to exhibit more of the following characteristics:

1. Willingness to be flexible, to be direct or indirect as the situation demands
2. Capacity to perceive the world from the student's point of view
3. Ability to "personalize" their teaching
4. Willingness to experiment, to try out new things
5. Skill in asking questions (as opposed to seeing self as a kind of answering service)
6. Knowledge of subject matter and related areas
7. Skill in establishing definite examination procedures
8. Willingness to provide definite study helps
9. Capacity to reflect an appreciative attitude (evidenced by nods, comments, smiles, etc.)
10. Conversational manner in teaching—informal, easy style

STUDENT VARIABLES RELATED TO MOTIVATION AND LEARNING

We talk a great deal about individual differences in learning ability among students, but we must remember that there are also differences in student personality characteristics which ap-

parently interact with teaching and motivation. Let us turn now to a discussion of those student variables which seem most related to motivation and learning.

Student Personality

Three separate experiments have reported findings which indicate that teaching methods do, indeed, interact with student personality characteristics to affect motivation and learning (56, 48, 34). In all of these experiments some students were placed in discussion or lecture sections where expectations were clearly defined, while other students were placed in more open-ended sections where they were free to establish objectives and course procedures. In one experiment, the more highly structured sections were taught in a cold, impersonal, even punitive manner, while the unstructured sections were conducted in a warm, supportive, and permissive way. In all three studies, a certain kind of student emerged who appeared to require a high degree of structure to make optimum progress. These students were described as being personally insecure and dependent. In addition—

> . . . intensely frustrated and lacking the personal security to make the best of a bad situation, this student becomes rigid, intropunitive, and vindictive in his evaluation of sections and instructors. To this student the permissive section meetings are "absolutely worthless," a place where intellectual confusion is heaped upon personal anxiety (56).

On the other hand, there were the more personally secure students who found the permissive, open-ended class very much to their liking and who flourished under its conditions. In any case, whether a student is secure or insecure, dependent or independent, these personality dimensions do make a difference when it comes to determining whether one teaching method or another will be successful as a motivating technique.

Compulsivity and anxiety are two other student personality characteristics which apparently influence motivation and learning. For example, it has been found that when teaching is structured, compulsive children do substantially better than less compulsive children. Highly anxious children do poorly in unstructured classrooms. Children who are both highly anxious and highly compulsive do their best work in structured classes,

and those who are highly anxious but low in compulsivity do poorly in unstructured classes (21).

Other evidence also points to individual differences in personality factors. It has been found that some pupils are more concerned about feelings and personal relationships, while others are mainly achievement-oriented. Classes made up mostly of students of the first type tend to accept the teacher whom they like and reject the teacher whom they dislike on personal grounds. Classes composed of students of the second type pay less attention to teacher warmth in estimating their acceptance or rejection of certain teachers (14).

Student Reactions to Praise and Blame

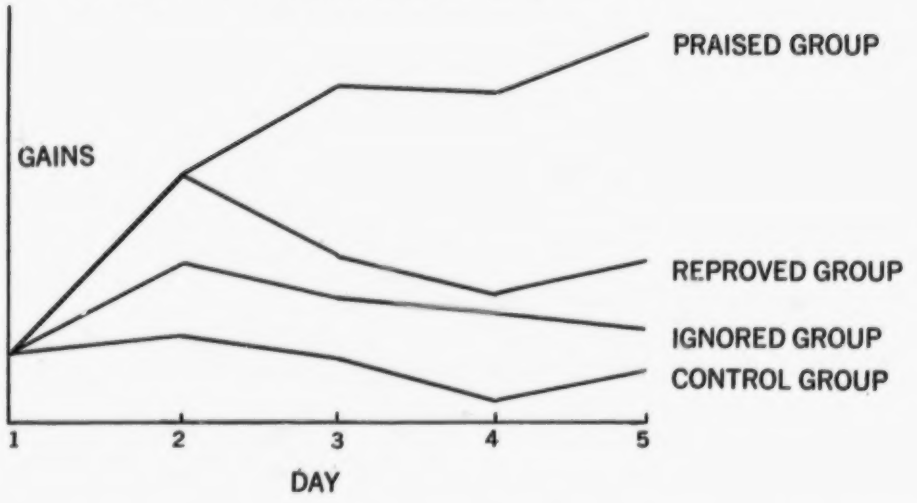
Generally speaking, praise is a more powerful motivator than either blame or reproof of the work performance of students. For example, in one study 106 fourth- and sixth-grade children of both sexes were divided into four groups matched on the basis of intelligence and arithmetic skill (28). A 15-minute daily practice period in addition was given to the groups for five consecutive days. One of the four groups served as the control group and received its tests separately without any comment as to performance. Irrespective of the score obtained, one of the three remaining groups received consistent praise; one received reproof; and one was ignored. The children in the praised group were called by name, told of their excellent results, and encouraged to improve. The reproved group was called out and criticized for poor work, careless mistakes, and lack of improvement. The ignored group received no recognition but merely heard what occurred to the other two groups. Figure 1, on page 18, provides a diagram of the results.

They show that the praised group made the greatest gains and the reproved group made greater gains than the ignored group. Apparently, even reproof is a sign of recognition and is better than no recognition at all!

However, the effects of praise and criticism on motivation and learning are not so simple as the above study indicates. Several other studies (18, 51) have indicated that the effects of praise or blame were related to personality differences as well. The major conclusions reached by these studies indicate that—

FIGURE 1

Gains Made by Fourth- and Sixth-Grade Pupils Under Different Incentive Conditions



1. When introverts and extroverts are grouped together (as is the case in most classrooms), either praise or blame is more effective in increasing the work output of fifth-grade pupils than no external incentives.
2. If repeated often enough, praise increases the work output of introverts until it is significantly higher than that of introverts who are blamed or extroverts who are praised.
3. If repeated often enough, blame increases the work output of extroverts until it is significantly higher than that of extroverts who are praised or introverts who are blamed.

It is apparent that the use of praise or blame has different effects on children with different personality characteristics. It seems altogether possible that indiscriminate praise may be as detrimental to student's motivation and learning as indiscriminate blame or criticism. Perhaps one way to enhance our teaching effectiveness is to be constantly sensitive to personality differences among students in order to use incentives such as praise and blame wisely and appropriately.

Student Reactions to Success and Failure

We probably do not have to go much further than our own life experiences in order to understand the differential effects of success and failure. What is a success experience for one

student is a failure experience for another. For example, I received a "C" in an undergraduate course which I regarded as particularly difficult. That "C" was quite consistent with my goal and level of aspiration for performance, and I felt it was a minor, if not a major, success. However, a friend of mine who also received a "C" in that course viewed this as a total failure because her personal goal and level of aspiration was not lower than a "B."

Although each of our levels of aspiration determines to a large extent what we interpret as failure or success, another factor worth considering is our history of successes and failures. For example, to fail at something is more tolerable if we have had a history of success in that particular endeavor. Some cases in point: a .340 baseball player is not particularly discouraged when he strikes out, but a .140 player is; a football team with a 10-0 record is not likely to give up after losing the eleventh game, but a 0-10 football team might; a girl who has had many boyfriends is not apt to sour on boys if she loses one, but a girl with few boyfriends could; a student with a long string of above average grades is not likely to quit school if he fails his first course, but a below average student who fails his tenth course might.

In a sense each of us, like each of our students, has what we could call a "psychological bank account." Just as we deposit money in our savings account, we deposit successes in our psychological account. Some people have less money, therefore can deposit less and, in fact, have less to draw on in time of need. Somewhat the same is true of success. Some adults and children simply have fewer successes to deposit in their psychological accounts, and just as it is possible to go financially bankrupt, it is possible to experience *psychological* bankruptcy. The difference is that when we are financially bankrupt, there is always the possibility of starting over again. Not so with psychological bankruptcy—one's failures are not so easily wiped away. If we take this analogy into the school world, we can all think of students we know who pay their way through school (if they make it) on what amounts to a "psychological deficit financing plan." For the most part, they are students for whom school success is neither easily won nor easily available. Just as having enough

money encourages some to invest to make more, so having enough success encourages some to invest in greater success. But there has to be an "account" to begin with.

Research has shown that a person's success experiences contribute to his setting realistic levels of aspiration (45, 43). People who have little money will sometimes engage in wild, risk-taking ventures to get more or become uncommonly conservative in order to reduce the risk of losing what they have. Students with histories of academic failure do somewhat the same thing. They set goals either so low that no hazard is involved or so high that success is impossible. They are, to a large extent, unpredictable. If we are to help these kinds of students be more consistent and more realistic about goal-setting, we ought to keep reminding ourselves that not all students will be motivated in the same way or interested in the same things. If we can remain aware of this, perhaps we can work harder at making success more available in more different ways and at more different levels. One way of doing this is to recognize that different students learn in different ways.

Student Differences in Learning Style

Although little formal research on this subject has been conducted, we are beginning to understand that there are, indeed, different "styles" for learning (39). There is no evidence that any one style is better or worse than another; if we are not careful, we may get caught in the trap of judging a learning style wrong just because it doesn't match our own. Most learning styles may be categorized as principally visual (reading), aural (listening), or physical (doing things), although it is possible that any one person may use more than one.

In the interests of effective motivation, it is important to identify each student's learning style as quickly as possible. If, for example, some students seem to learn best by reading, you may want not only to suggest books to them, but also to call on them more often in class to encourage them to experience more physical or verbal learning encounters. (Some students even *hope* to be called on because they lack the confidence to raise their hands.) On the other hand, you may find it beneficial to encourage the more physical and aural students to read more. The point is that

once we identify and become aware of each student's particular style for learning, we can encourage his best use of that style and help him experience other modes of learning as well.

Summary Statement

What is important for one student is not important to another; this is one reason why cookbook formulas for good teaching are of so little value and why teaching is inevitably something of an art when it comes to motivating students and helping them learn. The choice of instructional methods makes a big difference for certain kinds of pupils, and a search for the "best" way to motivate can succeed only when student variables such as intellectual *and* personality differences are taken into account.

TEACHING TECHNIQUES TO ENHANCE MOTIVATION AND LEARNING

We began this pamphlet by suggesting that there is no one best formula, or technique, which will motivate all students in the same way or to the same degree. As you have seen, the interaction of self-concept, teacher, and student variables is so complex that no single approach can work by itself. What follows are some classroom techniques and procedures which may be of value to you in your day-to-day teaching.

Distribution of Practice and Rest in Learning

New learning material, like medicine, may be presented in large or small doses. It may be concentrated into relatively long unbroken periods of work or spread over several short sessions. Almost without exception, research concerned with the relative effectiveness of spacing new learning, whether motor or verbal, over a period of time and cramming it into a shorter time span shows that learning should be spaced in order to encourage and sustain high motivation. For example, a few words in spelling each day for a week will be mastered better than a large number bunched into one lesson.

How long should the intervals between learnings periods be? Within limits, longer learning periods call for longer rest periods. Generally speaking, new tasks should be introduced to students in small quantities with short initial learning sessions and short rest intervals. Gradual lengthening of the learning periods should follow. Coaches are very skilled at this: note how they begin with short practice sessions and gradually increase them. Maybe there is something you can learn from the coach in your school about this. Also, to encourage a peak performance—on an exam, for example—concentrated practice or review the day before of well-learned material is usually desirable.

Overlearning

Retention of new materials can be increased if practice or review continues beyond the point of the first errorless reproduction of the new information. That we can drive a car after years of not driving, type after years of not typing, play the piano after months of not playing, or remember portions of our high school fight song are all examples of things we have "overlearned."

As a technique for increasing motivation and retention, encouraging students to overlearn new material is most advisable when (a) they are learning specific, concrete material such as grammar rules, multiplication tables, names, dates, the periodic table, or even football plays, or (b) there is a long interval between learning new material and its recall. Overlearning is not enhanced through elongated study sessions but rather is best accomplished through the use of spaced review periods. Encouraging students to overlearn abstract principles or concepts which they do not understand is *not* wise, however, because it may invite them to simply memorize new material without first understanding it.

Knowledge of Results

A good technique for keeping students motivated is to provide them with essential information regarding their performance. Immediate, meaningful, specific knowledge of results, besides providing the information requisite to improvement of performance, has the advantage that awareness of progress serves as an

incentive toward increased effort. Still more important, knowing what one doesn't know permits more effective distribution of one's time during study and/or practice sessions, because time isn't wasted rehearsing what is already known and is more likely to be allocated to what is not known.

The principle we are talking about can be simply stated: We are more likely to avoid mistakes if we know what our mistakes are in the first place. Hence, it is important to students that we indicate to them not only *what* was wrong but *why*. In addition, research has shown that in order to maintain high student interest and motivation, the time span should be as short as possible between, for example, handing in a paper or writing an exam and feedback about the results. Nothing stifles motivation more effectively than to have to wait two or three weeks to get an exam or a paper back. Even worse is the experience of having to wait two or three weeks and receive no more feedback than a cold, impersonal grade in the upper right-hand corner. This may tell students how they have done, but it does not communicate to them how they might improve.

Providing knowledge of results can be an excellent way of motivating students to apply themselves to the task at hand. Not only is it a fairly safe method, but it is an honest, intrinsic form of motivation. Knowledge of our previous performance tends to make us compete against ourselves. And for most of us, this is a contest in which we can hope for considerable success. We are not requested to match the record of the brightest student in class or some other lofty ideal. We are only challenged to either beat or match our own previous performance. In sum, then, students are more likely to remain at a higher level of motivation if they are given information about their performance as quickly as possible and with a personal comment or two on each paper or test.

Recitation During Learning

It has been reliably shown that reading combined with recitation is superior to reading alone for learning either concrete or abstract material. Reading a book is one thing, but remembering what was read is quite another. A valuable suggestion you might make to your students is that they either write out or recite in their own words the ideas or information in the new material they

are learning. Another variation of the recitation idea is to encourage students to make up their own exams from the material they are reading and then try to answer their own questions. A good way to do this is to use the subheadings within each text as question guides. For example, if you were going to make up your own personal content test on the information in this pamphlet, you might build questions out of just the subtitles. This section is subtitled "Recitation During Learning." You might write as one of your questions, "What is recitation during learning? How should it be done?" Your task, then, at the end of reading would be to go over your test to see how much you actually retained and understood. A great advantage of this self-testing system is that you find out immediately what you do not know and can take whatever remedial steps are appropriate.

Whole and Part Learning

Whole learning involves looking at the "big picture" first, before moving to the specifics. Part learning is just the reverse of this —each "part" or specific is studied in an effort to understand the total picture. Each system has its advantages, and wise teachers can assist their students to greater motivation and learning through the appropriate use of the whole and part methods.

The whole method of learning is probably better when—

- One wants a global picture of something without paying particular attention to details. Scanning a book, looking only at chapter summaries and occasional paragraphs, is an illustration of this process.
- One has an above-average IQ.
- The material is meaningful and more concrete than abstract.
- The material is closely knit together, on one theme, and not too long.

The part method of learning is better when—

- A student is not very capable intellectually. For example, slow learners and many disadvantaged students need to learn new material a step at a time because of the intellectual difficulty they may have in seeing the "whole" picture. Students need the reward and encouragement they can receive more frequently when learning smaller subunits of material. The whole method can be more discouraging because some students

have to work too long before they see any return for their efforts.
- The material is long, complicated, and lacking a central theme running through it.

As you can see, the *character of the material* has much to do with the relative advantages of these two methods. For best motivational and learning results, a combination of the two methods is probably the best idea. For example, whatever you teach, it would be good practice to begin by helping your students see the "whole" picture. Then divide the whole picture into suitable subsections and approach it by the part method. Finally, review the whole to secure adequate organization of the parts into a total associative train.

Divergent Versus Convergent Questions

Sometimes, in our quest for "the right answers," we fall into the trap of asking only one kind of question—the convergent kind. Of course, there can be only one kind of answer to this sort of question, and it is usually a response which sorts through, synthesizes, and integrates answers from existing data. Divergent questions, however, invite a quite different type of thinking and responding. They demand answers which are original, novel, and creative. To ask a divergent question is to ask not only "What do you *know* about this?" but also "What do you *think* about this?"

Examples of both types of questions can be drawn from the classroom. If, while teaching *Macbeth*, the teacher asks, "Who killed Duncan?" then clearly only convergent thinking is involved: the student either knows the answer (from reading the play, or John's notes) or he does not know. When the teacher asks, "Why did Macbeth kill Duncan?" the student's task is to gather appropriate data *from the play* and come up with a cogent answer. When the teacher asks, "What would you have done if you were Lady Macbeth?" the student is invited to think divergently, to make up alternative plots for the play based on his own feelings. Finally, if the teacher asks, "Should Macbeth have gotten away with all the murders?" he is attempting to get some sort of moral judgment, which is an open invitation to all sorts of divergent thinking.

Convergent, memory-type questions do have a place in the classroom, but we may seriously hinder motivation and learning if we encourage only convergent thinking. To take another example from English, divergent questions and composition assignments about literature invite the student to participate in the book, to become a character in it, to shape its plot to fit his own experience. The convergent question about the same book forces the student to come to terms with the book as it is given, a collection of information to be analyzed in some logical way. If we remain aware of these distinctions between kinds of thinking, then we can plan more purposefully, and we can also plan to make deliberate shifts from one kind of thinking to another. Next time you think about wanting your students to do a book report, consider the possibility of asking them to *write a story,* their own story, revolving around the same material the book report would have covered. Better still, ask half of the class to do a book report and the other half the story so you can note and perhaps discuss the attitudes each group has about each type of assignment. Also, from time to time, try asking your students how they *feel* about issues as opposed to asking what they *know* to see for yourself whether the thinking and responses are more divergent than convergent.

Exploiting the Motivational Possibilities of the Curriculum

Nearly everything in a curriculum is charged with psychological and motivational possibilities when looked at in terms of what it might do to help students find themselves, realize their potentialities, use their resources in productive ways, and enter into relationships which have a bearing on their ideas about school and attitudes toward themselves.

Sometimes, in our anxiety to cover a certain unit of material in a given amount of time, to give our students what we consider to be crucial information and knowledge, we end up teaching in a non-self-related manner. Many times students dislike English, or history, or social studies, or some other subject because it seems to have no personal meaning or relevance to their own lives. Indeed, many students see little relationship between what happens in school and what goes on outside of school. Can we make school

more personally meaningful? Very probably so if we exploit the psychological as well as the academic content of a curriculum. Let's take some examples.

In social studies, we could encourage more inquiries into human values, needs, aspirations, and the competitive tendencies involved in economic affairs. In civics, for example, rather than simply *talk* about the different forms of city government, the class could actually set them up in the classroom. Students could run for office, conduct campaigns, debate issues—in short *live* the government, the election, the victory, and the defeat. Take history as another case in point. Wouldn't it be better to teach history in terms of people and their experiences rather than just in terms of events, institutions, and movements? We all know something about significant historical dates, but what do we know about the motivations of the men behind them? Or, as another example, is it possible that high school students might get more out of Shakespeare's works by reading them not only as great literary masterpieces, but as unfolding dramas of human greed, love, and hate? How many students actually "see" *Julius Caesar* as an example of what untamed, selfish ambition can do to a man? Think a moment. How many contemporary men can you think of who reflect the personal qualities which led to Caesar's downfall? Could they be used as examples in class? I know of a class of slow-learning ninth graders who not only read *Romeo and Juliet,* but enjoyed it! A wise, sensitive teacher first exposed them to something they already knew about—*West Side Story.* They listened to the music in class, and since the movie was playing at a local theater, most of the students saw the film, too. True, the characters were Tony and Maria, not Romeo and Juliet; the scene was a fire escape, not a balcony; but they were in love, there were two feuding families, and it did end tragically. Thus, through the simple process of exposing students to something they already knew about and liked, the teacher made study of *Romeo and Juliet* not only possible, but, of all things, fun! What could easily have been a laborious, nonmeaningful English assignment was converted into an exciting adventure as the students puzzled through the similarities and differences between the two stories. This, in the best sense of the word, is exploiting the psychological potential of a curriculum while, at the same time, enhancing its motivational possibilities.

Biographies and autobiographies offer mirrors in which students can study, among other things, their own self-reflections. Drama and fiction are filled with conflicts such as occur in our daily lives —it only remains for the teacher to point these things out, to help students see the similarities to their lives, to utilize the feelings that exist in all of us.

Physical education abounds in psychological possibilities. It can be more than basketball, swimming, and push-ups. It can be that part of a curriculum where students can learn to discover and accept their own bodies. They can be introduced to a human laboratory in which they can see acts of meanness, cruelty, and hostility on the one hand, or behavior which reflects good sportsmanship and greatness in defeat on the other. More than that, they can learn to recognize the healthy as well as the morbid features of competition. Some students may discover that winning is not so impossible after all. Others may find that being first is not so important as they thought. Still others may find that to do anything well, whether in the classroom or on the game field, takes persistence, effort, hard work, and discipline. Indeed, if physical education *is* more than basketball, swimming, push-ups, and the like, then more students may carry over into life itself the sort of constructive, positive attitude about the use and care of the body which could make possible a more healthy, vigorous physical, as well as mental, existence.

Exploiting the psychological possibilities of a curriculum offers exciting new avenues for enhancing motivation and learning. This doesn't mean that we negate the importance of content—not at all. In fact, our concern about how to motivate students may be less of a problem if we can teach in a more self-related rather than a less self-related manner. In the final analysis, none of us is highly motivated to learn about those things which appear to be disengaged from and unconnected to his own personal life.

EPILOGUE

Motivation, teaching, and learning are complex interrelated processes. Even though we are never unmotivated, we can be, nonetheless, motivated in different ways and toward different ends. Some students are motivated to cut up in class, skip school, and even drop out. Others are motivated to listen quietly, study

diligently, and set long-term goals. This does not mean that a teacher's job is a hopeless task—not at all. It does mean that we must be constantly aware of ourselves and our students as unique individuals with different ways of responding to and interpreting the world. When we consider the multiplicity of teacher, student, and self-concept variables, it is plain that there is *no one best* way of teaching any more than there is one best way of learning. Rather, there seem to be *many best* ways of both teaching and learning. It depends on the teacher, the student, and indeed, the moment. Available evidence would not support any position which suggested that successful teaching and motivating is possible only through the use of some specific methodology. A reasonable inference from existing data is that methods which are more democratic than authoritarian—which provide for adaptation to individual differences, encourage student initiative, and stimulate individual and group participation—are superior to more authoritarian methods. To bring more democratic methods into use, perhaps what we need first of all are flexible, "total" teachers who are as capable of planning around people as around ideas.

A good teacher is a dramatist of ideas. He can help build bridges between the world of reality and the world of our dreams. He can make the past as vivid as the present and the future as possible as today. In many ways, teaching is basically an existential process. It reflects the personality, outlook, ideals, and background of the teacher who, though he may claim to be objective, in reality reflects the highly subjective spirit of his work and thinking. A good teacher not only knows his subject; he can radiate it and communicate a zest which goes far beyond the content itself. To a scientist like Einstein, science becomes an avenue to truth and the foundation of progess. To an artist like Wright, architecture is not a merely ornamental expression of man; rather it becomes an introduction to his innermost philosophical and spiritual needs. To a poet like Frost, poetry is not merely a lyrical expression but man's encounter with a timeless reality.

It is not necessarily the teacher who knows the most, in a technical sense, who does the best with students in terms of learning and motivation. Rather, it may be that person so immersed in his work that he infects students with the kind of zest for knowing that spills outside the classroom and enables students to become, ultimately, their *own* best teachers.

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